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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,553

01/17/2007

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050388-0045

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EXAMINER

LEE, REBECCA Y

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

07/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,553	Applicant(s) TOKUOKA ET AL.	
	Examiner REBECCA LEE	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/02/06, 02/14/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I, claims 1-5 in the reply filed on 06/29/09 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani et al. (JP62083444).

Regarding claims 1-2, Otani et al. disclose a heat-resistant aluminum alloy with a composition relative to that of the instant invention as shown below, in weight percent (Otani et al., claim 2):

Element	Instant claims	Otani et al.	overlap
Si	10-16	5-40	10-16
Fe	1-3	(Fe + Ni) = 2-15	1-3
Ni	1-2	Fe:Ni = 1:4 ~ 4:1	1-2
Ti + Zr + Cr + V	0.5-2	0.05-5 with Zr, Cr and V= 0	0.5-2
Ti	0.5-2	0.05-5	0.5-2
Cu	0.6-3	0.5-6	0.6-3
Mg	0.2-2	0.1-8	0.2-2

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Al	balance	balance	balance
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The amounts of Si, Fe, Ni, Ti, Cu, Mg and Al disclosed by Otani et al. overlaps the claimed amounts of Si, Fe, Ni, Ti, Cu, Mg and Al of the instant invention, which is prima facie evidence of obviousness MPEP 2144.05. It would have been obvious to one of ordinary skill in the art to have selected claimed amounts of Si, Fe, Ni, Ti, Cu, Mg and Al from the amounts disclosed by Otani et al. because Otani et al. disclose the same utility throughout the disclosed ranges.

The limitation of "by densifying aluminum alloy powder prepared by gas atomizing" is considered as process limitation in a product claim, which does not render the instant claim patentable MPEP 2113.

Even though Otani et al. do not expressly teach the grain diameter of the silicon, the aluminum alloy of Otani et al. is made by a similar method (by solidifying an air atomized powder, claims 3-4 of Otani et al.). It would have been obvious to one of ordinary skill in the art to expect the aluminum alloy of Otani et al. to have the similar average silicon grain diameter as claimed.

Furthermore, it is well held that discovering an optimum value of a result-effective variable requires only routine skill in the art MPEP 2144.05. In the instant case, the size of the silicon grains is a result-effective variable since it would affect the alloy strength as taught by Otani et al. (Page 6, lines 3-16). Therefore, it would have been obvious to one of ordinary skill in the art to have optimized the silicon grain size of Otani et al. in order to achieve the desired aluminum alloy.

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Regarding claim 3, since the aluminum alloy of Otani et al. is made by a similar method (by solidifying an air atomized powder, claims 3-4 of Otani et al.); it would have been obvious to one of ordinary skill in the art to expect the aluminum alloy of Otani et al. has a similar density as claimed.

Regarding claims 4-5, Otani et al. disclose the aluminum obtained by hot plastic processing (Otani et al., claim 4) can be used as a piston (page 4, line 1).

In addition, claim 4 is considered as a product by process claim. The process limitation recited does not render the claim patentable MPEP 2113.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REBECCA LEE whose telephone number is (571)270-5856. The examiner can normally be reached on Monday-Friday 8:00 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROY KING can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. L./
Examiner, Art Unit 1793

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793